POINTING VS. SURVEY OBSRVATIONS BY GLAST

Jim Buckley and Julie McEnery

The dominant observing mode of GLAST is expected to be a sky survey. In this mode the LAT will be rocked about the orbital plane to provide almost uniform coverage of the entire sky every three hours. This provides continuous monitoring of all sources on timescales greater than 3 hours, guaranteeing gamma-ray data for a wide range of studies. During this 3 hour period, each region of the sky will be observed for around 30 minutes, this is a result of the very wide field of view of the LAT (>2.5 sr). Sky survey data from the LAT is likely to address the needs of most guest investigators. However, GLAST is also capable of performing pointed observations. This may be useful for studies of very bright, rapidly variable sources that benefit from more densely sampled observations, such as gamma-ray bursts and their afterglows. In some exceptional cases, pointed observations may also be desirable to maximize exposure on a source, for example to minimize systematic uncertainties and computational overhead in blind searches for periodicity in candidate pulsars. However, pointed observations will have a detrimental effect on coverage of the rest of the sky, which may hurt multiwavelength campaigns and uniformity of time monitoring studies, and the benefits of these observations must be weighed against the detriment to the rest of the scientific program.

Thus a request from a guest observer for pointed observations must be strongly justified. Since the first year will be devoted to survey mode, a proposal for pointed observations must show that sensitivity and/or systematics of a limited-time point are significantly better than what is available with 2 years of all-sky survey data (for year 2 proposals). The baseline plan for pointed observations should not exceed 20% of the total observatory time. This allocation includes GRB autonomous repoints and TOOs. The peer review panel will consider this breakdown in accepting the ranked observing proposals.